REMARKS

Claims 1-14 are pending in this application. Claims 1, 2, 4, 5, 13, and 14 are independent claims. By this response, claims 1-14 are amended.

Claim Rejections under 35 U.S.C. §112, second paragraph

Claims 1 – 12 stand rejected under 35 U.S.C. § 112, second paragraph, on the theory that they are indefinite because they omit certain structural cooperative relationships. Insofar as it pertains to the presently pending claims, this rejection is respectfully traversed.

Claim 1

Claim 1 is rejected on the theory that it fails to show a structural cooperative relationship between multi-feeding detection and the operation of the working portion of the image processing mechanism.

An optical sensor is now described as operably connected to the working portion of the image processing mechanism. Applicants respectfully submit that this connection satisfies a structural relationship between the working portion and a detecting portion (the optical sensor).

Applicants respectfully submit that one of ordinary skill in the art would recognize that the specific nature of the connection between the sensor and the working portion does not affect or impact the underlying concept of their combined operation. Specifically, the type and nature of a control element connecting or controlling one or both of the sensor and working portion does not alter or otherwise modify the fundamental principle that image processing proceeds normally if nothing obstructs the line of sight between the first original and the working portion. Applicants therefore submit that the structural cooperative relationship between the optical sensor and the working portion is sufficiently described to render the claim clearly defined and readily understandable to one of ordinary skill in the art.

Claims 2, 4, and 5

Claims 2, 4 and 5 and their associated dependent claims are rejected on the theory that claims 2, 4, and 5 fail to show a structural cooperative relationship between multi-feeding detection and the reading operation of the first original.

These claims now specifically recite that it is the optical sensor portion of the original reading mechanism that detects a multi-feeding incident and determines the relative orientation of the multi-fed pages. As stated with respect to independent claim 1, Applicants respectfully submit that such a recitation renders it clear to one of ordinary skill in the art what the structural cooperative relationship is between multi-feeding detection and a reading operation.

Claim 3 and 6

Claims 3 and 6 are rejected on the theory that these claims omit an essential structural cooperative relationship explaining how originals are supplied from either the top or bottom of a stack. Applicants respectfully submit that these claims now state that the originals are supplied via the moveable member. Applicants therefore submit that claims 3 and 6 now clearly indicate, to one of ordinary skill in the art, the nature of the relationships between the structural components.

Claims 7 and 8

Claims 7 and 8 are rejected on the theory that these claims omit an essential structural cooperative relationship explaining how a leading edge is detected. Applicants respectfully submit that these claims now state that detection is performed with the optical sensor while an original is illuminated. Applicants therefore submit that claims 7 and 8 now clearly indicate, to one of ordinary skill in the art, the nature of the relationships between the structural components.

Claim 9

Claim 9 is rejected on the theory that it omits an essential structural cooperative relationship between the notifier and the original reading mechanism. Claim 9 now recites that

the notifier is operably connected to the original reading mechanism. Applicants respectfully submit that such a connection is sufficient to indicate, to one of ordinary skill in the art, the nature of the relationship between the notifier and the original reading mechanism. One of ordinary skill in the art will appreciate that the notifier may be triggered or activated in a variety of ways, any of which may be suitable depending on the specific nature of a given implementation. One of ordinary skill in the art will also appreciate that a recitation of a specific triggering or activation device or signal pathway is not essential for an understanding and appreciation of the structural and functional relationship between the original reading mechanism and the notifier.

Claims 11 and 12

Claims 11 and 12 are rejected on the theory that is it unclear how the electronic equipment therein is combined. Applicants hereby amend claims 11 and 12 to clarify their original intent, which was to claim a copier, scanner, fax, or multi-function device employing the image processing or original reading devices of claims 1 and 2, respectively.

Summary

At least in view of the above, Applicants respectfully submit that claims 1 – 12 now satisfy the requirements of 35 U.S.C. §112, second paragraph. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Claim Rejections under 35 U.S.C. §102(b)

Claims 1, 11, 13 and 14 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 6,554,275 to Tranquilla ("Tranquilla"). Insofar as it pertains to the presently pending claims, this rejection is respectfully traversed.

Prior Art

Tranquilla teaches a system and method for paper overlap or gap error detection and mitigation in a document feeder (Abstract). Specifically, Tranquilla teaches a system that

controls document gap or overlap after detection because document processing functions "required that there be space between successive documents for these processes to be reliably performed." (Col. 5, lines 47 – 56).

Claim 1

Independent claim 1 pertains to "an image processing mechanism that performs image reading processing of the paper transported by the paper transport mechanism, said mechanism including an optical sensor operably connected to a working portion of said mechanism such that upon detection, by the optical sensor, of a multi-feeding incident where a first paper is transported by the paper transport mechanism along with another paper such that the two papers at least partially overlap, the working portion of the image processing mechanism performs image reading processing of the first paper when the optical sensor determines that the other paper is not positioned between the first paper and the working portion of the image processing mechanism."

Applicants respectfully submit that, unlike Tranquilla, independent claim 1 makes no effort or attempt to mitigate the overlap detected but instead measures the overlap with the optical sensor of the image processing mechanism and determines if, despite the overlap, image processing may proceed anyway. If image processing may still be performed, the apparatus continues with image processing despite the overlap and with no requirement to correct or mitigate the overlap in the paper pathway.

Applicants respectfully submit that Tranquilla specifically teaches an approach of overlap detection and mitigation whereas the independent claim 1 relates to an workaround approach where, even when there is document overlap, image processing proceeds "when the optical sensor determines that the other paper is not positioned between the first paper and the working portion of the image processing mechanism."

Applicants further submit that Tranquilla's teachings are wholly unrelated to independent claim 1 because Tranquilla seeks only to mitigate and correct gap and overlap issues so that there is "space between successive documents for [document processing] to be reliably performed"

(Col. 5, lines 55 – 56). By contrast, independent claim 1 pertains to an apparatus that reliably performs document image processing regardless even when document overlap is detected "when the optical sensor determines that the other paper is not positioned between the first paper and the working portion of the image processing mechanism."

Applicants respectfully submit that Tranquilla therefore fails to teach or suggest an image processing apparatus where "upon detection, by the optical sensor, of a multi-feeding incident where a first paper is transported by the paper transport mechanism along with another paper such that the two papers at least partially overlap, the working portion of the image processing mechanism performs image reading processing of the first paper when the optical sensor determines that the other paper is not positioned between the first paper and the working portion of the image processing mechanism" as required by independent claim 1.

Claim 11

Applicants respectfully submit that claim 11 is allowable at least by virtue of their dependency from independent claim 1.

Claim 13

Independent claim 13 pertains to "an original reading method comprising: transporting a first original document with an original transport mechanism, reading an image of the transported original document with an original reading mechanism, detecting, during said transporting, a multi-feeding incident where another original document is transported during said transporting such that both documents at least partially overlap, where detecting includes determining relative positions of said first and other original documents, and continuing said reading an image if determining indicates that the other original document is not positioned between the first original document and the reading portion of the original reading mechanism."

Applicants respectfully submit that, as stated above with respect to independent claim 1, independent claim 13 teaches a method of "continuing said reading an image if determining indicates that the other original document is not positioned between the first original document

and the reading portion of the original reading mechanism" despite there being a paper overlap error. Tranquilla, by contrast, teaches a method of mitigating paper overlap so that there is no overlap during document reading. Tranquilla neither discusses nor suggests that document processing may proceed normally with an un-mitigated document overlap error.

Applicants therefore respectfully submit that for at least the same reasons at set forth with respect to independent claim 1, Tranquilla fails to teach or suggest "determining relative positions of said first and other original documents, and continuing said reading an image if determining indicates that the other original document is not positioned between the first original document and the reading portion of the original reading mechanism" as required by independent claim 13.

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Claim 14

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Independent claim 14 pertains to "an original reading method comprising: transporting a first original document with an original transport mechanism, reading an image of the transported original document with an original reading mechanism, detecting, during said transporting, a multi-feeding incident where another original document is transported during said transporting such that both documents at least partially overlap, where detecting includes determining relative positions of said first and other original documents, and altering said reading operation to read an image of the other original document if determining indicates that the other original document is positioned between the first original document and the reading portion of the original reading mechanism."

Applicants respectfully submit that Tranquilla is deficient in its teaching with respect to independent claim 14 for at least the same reasons at set forth with respect to independent claim 13. Specifically, Tranquilla fails to teach or suggest any form of image reading when a document overlap is present. Applicants therefore respectfully submit that Tranquilla fails to teach or suggest "altering said reading operation to read an image of the other original document if determining indicates that the other original document is positioned between the first original

document and the reading portion of the original reading mechanism" as required by independent claim 14.

Summary

At least in view of the above, Applicants respectfully submit that Tranquilla neither teaches nor suggests performing image processing of an original when it is overlapped with or by another original due to a multi-feeding error. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Claim Rejections under 35 U.S.C. §103(a) – Sueoka

Claims 2 – 8 and 12 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tranquilla in view of U.S. Patent Publication 2003/0090050 to Sueoka ("Sueoka"). Insofar as it pertains to the presently pending claims, this rejection is respectfully traversed.

Claim 2

Independent claim 2 pertains to an original reading apparatus having an original transport mechanism with a moveable member and an original reading mechanism with an optical sensor arranged such that "upon detection, by the optical sensor, of a multi-feeding incident where the first original document is transported along with another original document such that the two documents at least partially overlap, the reading operation of the image of the first original document by the original reading mechanism continues if the optical sensor determines that the other original document is not positioned between the first original document and a reading portion of the original reading mechanism."

Applicants respectfully submit that Tranquilla is deficient in its teaching with respect to independent claim 2 for at least the same reasons at set forth with respect to independent claim 1. Specifically, Tranquilla fails to teach or suggest performing an image reading operation when, upon detecting paper overlap due to multi-feeding, it is determined that the overlapping page does not obscure the intended original from being read. Applicants further submit that Sueoka is

not relied upon, nor can it properly be relied upon, to remedy this deficiency of Tranquilla with respect to independent claim 2.

Claim 4

Independent claim 4 pertains to an original reading apparatus having an original transport mechanism with a moveable member and an original reading mechanism with an optical sensor arranged such that "upon detection, by the optical sensor of a multi-feeding incident where the first original document is transported along with another original document such that the two documents at least partially overlap, the reading operation of the image of the first original document by the original reading mechanism is stopped if the optical sensor detects that the other original document is positioned between the first original document and a reading portion of the original reading mechanism"

Applicants respectfully submit that Tranquilla is deficient in its teaching with respect to independent claim 4 for at least the same reasons at set forth with respect to independent claim 1. Specifically, Tranquilla fails to teach or suggest deciding, based on whether an original is or is not obscured as a result of document overlap, if a document reading operation should be stopped. Tranquilla deals only with the mitigation of overlap by adjusting paper transport speed (Abstract) and does not address issues of document reading when documents arrive to a reading mechanism while overlapped. Applicants further submit that Sueoka is not relied upon, nor can it properly be relied upon, to remedy this deficiency of Tranquilla with respect to independent claim 4.

Claim 5

Independent claim 5 pertains to an original reading apparatus having an original transport mechanism with a moveable member and an original reading mechanism with an optical sensor arranged "such that upon detection, by the optical sensor, of a multi-feeding incident where the first original document is transported along with another original document such that the two documents at least partially overlap, the reading operation of the image of the other original document by the original reading mechanism proceeds if the optical sensor detects that the other

original document is positioned between the first original document and a reading portion of the original reading mechanism."

Applicants respectfully submit that Tranquilla is deficient in its teaching with respect to independent claim 5 for at least the same reasons at set forth with respect to independent claim 1. Specifically, Tranquilla fails to teach or suggest reading, when an original is obscured as a result of document overlap, the document obscuring the original. Tranquilla deals only with the mitigation of overlap by adjusting paper transport speed (Abstract) and does not address issues of document reading when documents arrive to a reading mechanism while overlapped. Applicants further submit that Sueoka is not relied upon, nor can it properly be relied upon, to remedy this deficiency of Tranquilla with respect to independent claim 5.

<u>Claims 3, 6 – 8, and 12</u>

Applicants respectfully submit that claims 3, 6 – 8, and 12 are allowable at least by virtue of their dependency from independent claims 2, 4, and 5.

<u>Summary</u>

At least in view of the above, Applicants respectfully submit that neither Tranquilla nor Sueoka, taken either alone or in combination (assuming the references may be combined, which Applicants do not admit), teach or suggest an apparatus that determines, during document overlap, whether one of the overlapping documents may be read despite the overlap error and then proceeds with document reading accordingly. Applicants respectfully submit that such a teaching is wholly absent from both Tranquilla and Sueoka. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

<u>Claim Rejections under 35 U.S.C. §103(a) – JP029</u>

Claims 9 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tranquilla in view of Sueoka in further view of Japanese Publication 59-12029. Insofar as it pertains to the presently pending claims, this rejection is respectfully traversed.

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Applicants respectfully submit that claims 9 and 10 are allowable at least by virtue of their dependency from independent claims 2, 4 and 5. Applicants further submit that JP 59-12029 is not relied upon, nor can it properly be relied upon, to remedy the deficiencies of Tranquilla and Sueoka with respect to independent claims 2, 4 and 5 and all claims depending therefrom. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.
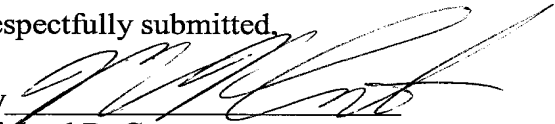
Conclusion

Entry of the above amendments is earnestly solicited. An early and favorable action on the merits is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Naphtali Y. Matlis (Reg. No. 61,592) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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